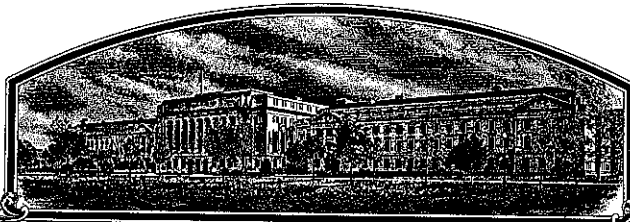


No.

9300177



THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Virginia Agricultural Experiment Station

Whereas, THERE HAS BEEN PRESENTED TO THE
Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED NOVEL VARIETY OF SEXUALLY REPRODUCED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF *eighteen* YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, IMPORTING IT, OR EXPORTING IT, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT. UNITED STATES SEED OF THIS VARIETY (1) SHALL BE SOLD BY VARIETY NAME ONLY AS OF CERTIFIED SEED AND (2) SHALL CONFORM TO THE NUMBER OF GENERATIONS BY THE OWNER OF THE RIGHTS. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

BARLEY

'Nomini'

In Testimony Whereof, I have hereunto set my hand and caused the seal of the Plant Variety Protection Office to be affixed at the City of Washington, D.C. this 30th day of September in the year of our Lord one thousand nine hundred and ninety-four.

Attest:


Kenneth A. Evans
Commissioner
Plant Variety Protection Office
Agricultural Marketing Service

Mike Esny
Secretary of Agriculture

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE
(Instructions on reverse)

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF APPLICANT(S) (as it is to appear on the Certificate) Virginia Agricultural Experiment Station		2. TEMPORARY DESIGNATION OR EXPERIMENTAL NO. VA 84-44-342	3. VARIETY NAME Nomini
4. ADDRESS (street and no. or R.F.D. no., city, state, and ZIP) Virginia Polytechnic Institute and State Univ. 104 Hutcheson Hall Blacksburg, VA 24061		5. PHONE (Include area code) (703) 231-3766	
6. GENUS AND SPECIES NAME <u>Hordeum vulgare</u> L.		7. FAMILY NAME (Botanical) Gramineae	
8. CROP KIND NAME (Common Name) Winter Barley		9. DATE OF DETERMINATION June 29, 1992	
10. IF THE APPLICANT NAMED IS NOT A "PERSON," GIVE FORM OF ORGANIZATION (Corporation, partnership, association, etc.) Agricultural Expt. Station of the Va. Polytech. Inst. & State Univ.			
11. IF INCORPORATED, GIVE STATE OF INCORPORATION		12. DATE OF INCORPORATION	
13. NAME AND ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS Carl A. Griffey Crop and Soil Environmental Sciences Virginia Tech Blacksburg, VA 24061-0404			
PHONE (Include area code): (703) 231-9789			
14. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED (Follow INSTRUCTIONS on reverse)			
a. <input checked="" type="checkbox"/> Exhibit A, Origin and Breeding History of the Variety.			
b. <input checked="" type="checkbox"/> Exhibit B, Novelty Statement.			
c. <input checked="" type="checkbox"/> Exhibit C, Objective Description of Variety.			
d. <input checked="" type="checkbox"/> Exhibit D, Additional Description of Variety.			
e. <input checked="" type="checkbox"/> Exhibit E, Statement of the Basis of Applicant's Ownership.			
f. <input checked="" type="checkbox"/> Seed Sample (2,500 viable untreated seeds). Date Seed Sample mailed to Plant Variety Protection Office <u>19 March 1993</u>			
g. <input checked="" type="checkbox"/> Filing and Examination Fee (\$2,150) made payable to "Treasurer of the United States."			
15. DOES THE APPLICANT(S) SPECIFY THAT SEED OF THIS VARIETY BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED? (See section 83(a) of the Plant Variety Protection Act.)			
<input checked="" type="checkbox"/> YES (If "YES," answer items 16 and 17 below) <input type="checkbox"/> NO (If "NO," skip to item 18 below)			
16. DOES THE APPLICANT(S) SPECIFY THAT THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS?		17. IF "YES" TO ITEM 16, WHICH CLASSES OF PRODUCTION BEYOND BREEDER SEED?	
<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		<input checked="" type="checkbox"/> FOUNDATION <input checked="" type="checkbox"/> REGISTERED <input checked="" type="checkbox"/> CERTIFIED	
18. DID THE APPLICANT(S) PREVIOUSLY FILE FOR PROTECTION OF THE VARIETY IN THE U.S.?			
<input type="checkbox"/> YES (If "YES," through <input type="checkbox"/> Plant Variety Protection Act <input type="checkbox"/> Patent Act. Give date: _____)			
<input checked="" type="checkbox"/> NO			
19. HAS THE VARIETY BEEN RELEASED, USED, OFFERED FOR SALE, OR MARKETING IN THE U.S. OR OTHER COUNTRIES?			
<input checked="" type="checkbox"/> YES (If "YES," give names of countries and dates)			
<input type="checkbox"/> NO			
Sold to certified seed growers in the U.S. by VA. Crop Improvement Association in Fall 1992 and will be offered for sale to U.S. producers in 1993. Not sold outside U.S.			
20. The applicant(s) declare(s) that a viable sample of basic seeds of this variety will be furnished with the application and will be replenished upon request in accordance with such regulations as may be applicable.			
The undersigned applicant(s) is (are) the owner(s) of this sexually reproduced novel plant variety, and believe(s) that the variety is distinct, uniform, and stable as required in section 41, and is entitled to protection under the provisions of section 42 of the Plant Variety Protection Act.			
Applicant(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.			
SIGNATURE OF APPLICANT [Owner(s)]  L. A. Swiger		CAPACITY OR TITLE Interim Dean, Col. of Agr. & Life Sci.	
SIGNATURE OF APPLICANT [Owner(s)]		CAPACITY OR TITLE	
DATE 12 March 1993		DATE	

Nomini Barley

14A. Exhibit A: Origin and Breeding History

Genealogy and Breeding Method. The parentage of *Nomini* is 'Boone'/'Henry'//VA77-12-41. The Virginia experimental line VA77-12-41 was derived from a composite of crosses, which consisted of CI 9623, CI 9658, CI 9708, and barley yellow dwarf resistant 'Atlas', each crossed to 'Cebada Capa'/'Wong'//Awnleted 'Hudson' selection. The series of crosses from which *Nomini* was derived was completed in 1977.

Selection and Advancement of the Variety. The segregating generations of this cross were advanced using a modified bulk breeding method, and *Nomini* was selected in 1983 as an F_6 headrow. This selection was grown in an observation plot in 1984 and was designated VA84-44-342. This line was first evaluated in a replicated yield trial in 1985 and, preceding its release, was evaluated for six years (1986-1991) in the Virginia Small Grains Variety Test.

Multiplication and Purification. Within the limits of biological expectation, *Nomini* has remained stable and uniform in composition through eight generations of selfing. In 1989, three hundred F_{13} headrows of *Nomini* were planted to develop Breeder Seed. Rows with obvious variants were removed prior to harvest, and seed from the remaining headrows was bulked and planted at the Virginia Foundation Seed Farm in the Fall of 1990. A low percentage of variant types was observed, which consisted of less than 0.1% plants with long beards. The field was rogued prior to harvest to remove these variants. This initial lot of *Nomini* Foundation Seed was planted at the Foundation Seed Farm in the Fall of 1991, and was shown to be uniform and genetically stable in the sense that the variety can be maintained and reproduced via seed without changing its characteristics.

In the Fall of 1991, 300 headrows of *Nomini* were planted to develop an improved lot of Breeder Seed. Headrows possessing or consisting entirely of variants were removed, and the remaining headrows were harvested individually. Seed from these headrows was planted in individual 45 ft² plots in the Fall of 1992. Residual seed from these headrows will be used to evaluate seedlings of each seed lot for their reaction to several diseases in the greenhouse and for seed characteristics to identify any additional variants. Based on visual observations of plant phenotype in the field and data from greenhouse and lab evaluations, plots possessing or consisting entirely of variants will be removed. The remaining plots will be harvested in bulk in the Fall of 1993 to form an improved lot of Breeder Seed, which will be used as the seed source for future multiplications.

Nomini Barley

14B. Exhibit B: Novelty Statement

Nomini is uniquely different from all known cultivars, but is most similar to 'Sussex' barley. Both cultivars are six-rowed and awnleted to awnless, with short, rough awns occasionally occurring on the central spikelets. Plants of both cultivars have glabrous basal leaf sheaths and waxy upper leaf sheaths that are yellow at maturity. Both cultivars have closed collars, and the rachis periphery of both cultivars is hairy. The spikes of both cultivars are dense, parallel, predominantly erect, and the lateral kernels do not overlap. Glumes of both cultivars are one-third to one-half the lemma length, with hairs in wide bands or occasionally covering the glume. Both cultivars have rough glume awns that are equal to or slightly longer in length than the glume. The yellow lemmas of both cultivars have few to several teeth on lateral and marginal nerves, and have a depression at the base. Both cultivars have stigmas that are hairy, and slightly to semiwrinkled white kernels.

Nomini differs from Sussex in the following characters. The flag leaves of *Nomini* are erect, while those of Sussex are drooping. The stems of *Nomini* tend to have necks that are gently curved, while those of Sussex are predominantly straight. Spikes of *Nomini* are glabrous, while those of Sussex are waxy. Kernels of *Nomini* have short-haired rachillas, while those of Sussex are long-haired.

Both *Nomini* and Sussex have good field resistance to powdery mildew, scald, and barley yellow dwarf. *Nomini* has the leaf rust resistance gene *Rph7*, and is resistant to most races of leaf rust, except for race 30. Sussex is susceptible to leaf rust, and does not possess any genes for resistance.

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
LIVESTOCK AND SEED DIVISION
BELTSVILLE, MARYLAND 20705

EXHIBIT C
(Barley)

OBJECTIVE DESCRIPTION OF VARIETY
BARLEY (*HORDEUM VULGARE*)

INSTRUCTIONS: See Reverse.

NAME OF APPLICANT(S)

FOR OFFICIAL USE ONLY

Virginia Agricultural Experiment Station

PVPO NUMBER

9300177

ADDRESS (Street and No. or R.F.D. No., City, State, and ZIP Code)

Virginia Polytechnic Institute and State University
Blacksburg, Virginia 24061-0402VARIETY NAME OR TEMPORARY
DESIGNATION
Nomini

Place the appropriate number that describes the varietal character of this variety in the boxes below.

Place a zero in first box (i.e. or) when number is either 99 or less or 9 or less.

1. GROWTH HABIT:

1 - SPRING 2 - FACULTATIVE WINTER 3 - WINTER Early Growth: 1 - PROSTRATE 2 - SEMIPROSTRATE
3 - ERECT

2. MATURITY (50% Flowering):

1 - EARLY (California Mariout) 2 - MIDSEASON (Betzes) 3 - LATE (Frontier)

No. of days Earlier than } 1 - BETZES 2 - CALIFORNIA MARIOUT 3 - CONQUEST 4 - DICKSON
 No. of days Later than } 5 - PIROLINE 6 - PRIMUS 7 - UNITAN 8 - SUSSEX 9 - BOONE

3. PLANT HEIGHT (From soil level to top of head):

1 - SEMIDWARF 2 - SHORT (California Mariout) 3 - MEDIUM TALL (Betzes) 4 - TALL (Conquest)

Cm. Shorter than } 1 - BETZES 2 - CALIFORNIA MARIOUT 3 - CONQUEST 4 - DICKSON
 Cm. Taller than } 5 - PIROLINE 6 - PRIMUS 7 - UNITAN 8 - SUSSEX 9 - BOONE

4. STEM:

Exertion (Flag to spike at maturity): 1 - 0 - 3 cm. 2 - 3 - 10 cm. Anthocyanin: 1 - ABSENT 2 - PRESENT
3 - 10 - 15 cm.

NO. OF NODES (Originating from node above ground)

Collar Shape: 1 - CLOSED 2 - V-SHAPED 3 - OPEN Shape of Neck: 1 - STRAIGHT 2 - SNAKY
4 - MODIFIED CLOSED OR OPEN 3 - OTHER (Specify) Gently curved

5. LEAF:

Basal leaf sheath (seedling): 1 - GLABROUS 2 - PUBESCENT Position of flag leaf (at boot stage): 1 - DROOPING
2 - UPRIGHT

Waxiness: 1 - ABSENT (Glossy) 2 - SLIGHTLY WAXY MM. WIDTH (First leaf below flag leaf)
3 - WAXY *Leaf sheath is waxy

CM. LENGTH (First leaf below flag leaf) Anthocyanin in leaf sheath: 1 - ABSENT 2 - PRESENT

6. HEAD:

Type: 1 - TWO-ROWED 2 - SIX-ROWED Density: 1 - LAX 2 - ERECT (Not dense)
3 - ERECT (Dense)

Shape: 1 - TAPERING 2 - STRAP 3 - CLAVATE Waxiness: 1 - ABSENT (Glossy) 2 - SLIGHTLY WAXY
4 - OTHER (Specify) Strap and Parallel 3 - WAXY

Lateral Kernels Overlap: 1 - NONE 2 - AT TIP Rachis (Hair on edge): 1 - LACKING 2 - FEW 3 - COVERED
3 - 1/4 - 1/2 OF HEAD

7. GLUME:

Length: 1 - 1/3 OF LEMMA 2 - 1/2 OF LEMMA Hairs: 1 - NONE 2 - SHORT 3 - LONG
3 - MORE THAN 1/2 OF LEMMA

*Predominantly type 3 but occasionally type 4
Hair covering: 1 - NONE 2 - RESTRICTED TO MIDDLE 3 - CONFINED TO BAND 4 - COMPLETELY COVERED

Awns: 1 - LESS THAN EQUAL TO LENGTH OF GLUMES 2 - EQUAL TO LENGTH OF GLUMES
3 - MORE THAN EQUAL TO LENGTH OF GLUMES

Awn Surface: 1 - SMOOTH 2 - SEMISMOOTH 3 - ROUGH

8. LEMMA: *Predominantly awnless but occasionally type 2.

☒ 1* Awn: 1 - AWNLESS 2 - AWNLETS ON CENTRAL ROWS AWNLESS ON LATERAL ROWS
 3 - SHORT ON CENTRAL ROWS, AWNLETS ON LATERAL ROWS 4 - SHORT (less than equal to length of spike)
 5 - LONG (longer than spike) 6 - HOODED

☐ 4 Awn Surface: 1 - AWNLESS 2 - SMOOTH 3 - SEMISMOOTH 4 - ROUGH

☐ 2 Teeth: 1 - ABSENT 2 - FEW 3 - NUMEROUS ☐ 1 Hair: 1 - ABSENT 2 - PRESENT

☒ 1 Shape of base: 1 - DEPRESSION 2 - SLIGHT CREASE ☐ 1 Rachilla Hairs: 1 - SHORT 2 - LONG
 3 - TRANSVERSE CREASE

9. STIGMA:

☐ 2 Hairs: 1 - FEW 2 - MANY

10. SEED:

☐ 2 Type: 1 - NAKED 2 - COVERED ☐ 1 Hairs on Ventral Furrow: 1 - ABSENT 2 - PRESENT

☐ 5 Length: 1 - SHORT (8.0 mm.) 2 - SHORT TO MIDLONG (7.5 - 9.0 mm.) 3 - MIDLONG (8.5 - 9.5 mm.)
 4 - MIDLONG TO LONG (9.0 - 10.5 mm.) 5 - LONG (10.0 mm.)

☐ 3 Wrinkling of hull: 1 - NAKED 2 - SLIGHTLY WRINKLED 3 - SEMIWRINKLED 4 - WRINKLED

☐ 1 Aleurone Color: 1 - COLORLESS (White or Yellow) 2 - BLUE

☐ 0 ☐ 0 PERCENT ABORTIVE: ☐ 3 ☐ 1 GMS. PER 1000 SEEDS

11. DISEASE: (0 = Not Tested, 1 = Susceptible, 2 = Resistant)

☐ 2 SEPTORIA ☐ 2 NET BLOTCH ☐ 2 SPOT BLOTCH ☐ 2 POWDERY MILDEW

☐ 0 LOOSE SMUT ☐ 0 BACTERIAL BLIGHT ☐ 0 COVERED SMUT ☐ 0 FALSE LOOSE SMUT

☐ 0 STEM RUST ☒ * LEAF RUST ☐ 0 SCAB ☐ 2 SCALD
 *Resistant to Race 8

☐ 0 AY ☐ 0 BSMV Susceptible to Race 30 ☐ 2 BYDV ☐ 0 OTHER (Specify)

12. INSECT: (0 = Not tested, 1 = Susceptible, 2 = Resistant)

☐ 0 GREEN BUG ☐ 0 ENGLISH GRAIN APHID ☐ 0 CHINCH BUG ☐ 0 ARMYWORM

☐ 0 GRASS HOPPERS ☐ 0 CEREAL LEAF BEETLE ☐ 0 OTHER (Specify)

HESSIAN FLY RACES ☐ 0 GP ☐ 0 A ☐ 0 B ☐ 0 C
☐ 0 D ☐ 0 E ☐ 0 F ☐ 0 G

13. CHEMICAL (0 = Not Tested, 1 = Susceptible, 2 = Resistant)

☐ 0 DDT ☐ 0 OTHER (Specify)

14. INDICATE WHICH VARIETY MOST CLOSELY RESEMBLES THAT SUBMITTED:

CHARACTER	NAME OF VARIETY	CHARACTER	NAME OF VARIETY
Plant tillering	Sussex	Seed size	Sussex
Leaf size	Sussex	Coleoptile elongation	
Leaf color	Sussex	Seedling pigmentation	Sussex
Leaf carriage	Henry		

REFERENCES: The following publications may be used as a reference aid for the standardization of character descriptions and terms used in this form:

1. Wiebe, G. A., and D. A. Reid, 1961, Classification of Barley Varieties Grown in the United States and Canada in 1958, Technical Bulletin No. 1224, U.S. Dept. of Agriculture.
2. Reid, D. A., and G. A. Wiebe, 1968, Barley: Origin, Botany, Culture, Winter Hardiness, Genetics, Utilization, Pests, Agriculture Handbook No. 338, U.S. Dept. of Agriculture, pp. 61 - 84.
3. Malting Barley Improvement Association, Milwaukee, Wisconsin, 1971, Barley Variety Dictionary.

COLOR: Nickerson's or any recognized color fan may be used to determine color of the described variety.

***Nomini* Barley**

14D. Exhibit D: Additional Description of *Nomini*

Nomini is an early maturing, medium tall, six-rowed winter feed barley (*Hordeum vulgare* L.) with compact spikes. Spikes of *Nomini* are usually awnless, but may occasionally have short, rough awns on the central spikelets. Early growth is semi-prostrate, basal leaf sheaths are green and glabrous, and upper leaf sheaths are waxy and at maturity are yellow. Penultimate leaves are 17 to 22 cm in length and 15 to 17 mm in width. Auricles of *Nomini* are white, flag leaves are short and upright, and stems have gently curved necks and are yellow at maturity. The distance from the flag leaf to spike ranges from 10 to 15 cm. *Nomini* has hairy stigmas and spikes that are dense, parallel, glossy, and erect with non-overlapping lateral kernels. The rachis is tough with hairy edges, and the collar is closed. The glumes of *Nomini* are one-third to one-half the lemma in length, and have hairs in wide bands or occasionally covering the glume. *Nomini* has rough glume awns that are equal to or slightly longer than the glumes in length. The yellow lemmas have few to several teeth on lateral and marginal nerves, with a depression at the base. *Nomini* has white semi-wrinkled kernels with short-haired rachillas.

Since *Nomini* has not been tested in comparison with any of the seven cultivars listed in Exhibit C, data on its performance in Virginia over a period of six years (1987-1992) are presented in Tables 1 and 2.1 - 2.6, which follow this section. *Nomini* also was evaluated for three years (1989-1991) in the Uniform Winter Barley Yield Nursery. Performance data for these nurseries is available in USDA nursery reports compiled by Dr. David Livingston at Pennsylvania State University.

Table 1. Comparative performance of Nomini barley in Virginia 1987-1992.⁽¹⁾

	Grain Yield (Bu/Ac)		Test Weight (Lbs/Bu)	
	'90-'92 [16]	'87-'92 [32]	'90-'92	'87-'92
Nomini	103	98	47.8	46.3
Sussex	88	87	46.7	45.3
Wysor	94	90	48.1	46.8
Boone	86	84	46.9	46.3
Pennco	100	95	47.3	45.6
LSD (0.05)	4			

	Date Headed (Mar 31+) [21]	Plant Height (Inches) [21]	Lodging (%) [25]	Powdery Mildew (%) [6]	Leaf Rust (%) [6]	Net Blotch ⁽²⁾ (0-9) [4]
Nomini	19	40	26	0	15	2
Sussex	18	39	35	0	31	3
Wysor	22	39	33	0	21	2
Boone	25	40	52	31	25	2
Pennco	23	40	30	0	6	4

⁽¹⁾ The number in brackets below column headings indicates the number of tests on which data are based.⁽²⁾ Disease reaction where 0=resistant and 9=susceptible.

Table 2.1 Summary of performance of entries in the State Barley Test, 1992.*

Variety	Yield (Bu/Ac) [5]	Bushel Weight (lbs.) [5]	Date Headed (Mar31+) [4]	Height (inches) [3]	Lodg. % [4]	Powdery Mildew % [2]	Leaf Rust (0-10)** [3]	Disease Reaction**	
								Powdery Mildew	Leaf Rust
Nomini	125+	49.1	18	37	26	0	8	R	MS
Barsoy	91-	49.7	18	39+	23	0	6-	R	MS
Sussex	104-	46.7-	16-	35-	6-	21+	10+	S	S
			15-	40+	37+	0	10+	R	S
Boone	107-	48.6	22+	39+	41+	36+	10+	S	S
Wysor	118	49.0	20+	39+	23	0	10+	R	S
Pennco	121+	48.5	20+	40+	21	0	3-	R	MR
Mollybloom	114	48.8	20+	39+	31	3	10+	R	S
Mulligan	111	49.2	22+	38	39+	26+	10+	S	S
Location Avg.	114	49.2	18	36	22	04	08		
L.S.D. (0.05)	06	01.2	02	02	13	09	02		
C.V.									

* The number in parentheses below column headings indicates the number of tests on which data are based. A plus or minus sign indicates a performance significantly above or below the test average, respectively.

** R = Resistant, MR = Moderately Resistant, MS = Moderately Susceptible, S = Susceptible.

*** These number are ratings on a 0-10 scale with 0 = none and 10 = near total leaf coverage.

Table 2.2 Summary of performance of entries in the State Barley Test, 1991⁽¹⁾

Variety	Seedling Reaction									
	Yield (Bu/Ac) [5]	Bushel Weight (lbs.) [5]	Date Headed (Mar31+) [4]	Height (inches) [3]	Lodg. % [4]	Powdery Mildew % [2]	Leaf Rust % [3]	Powdery Mildew	Leaf Rust	Scald
Nomini	107+	48.3	9	40	17	0	15	R	MS	MR
Barsoy	76-	49.8+	8	35	21	43+	75+	S	S	S
Sussex	99	47.9-	8	41	35+	0	38+	R	S	R
Boone	84-	46.5-	17	39	25	14+	34+	MS	S	S
Wysor	92	48.5	11	39	22	0	21+	R	MS	R
Pennco	101	47.6-	12	41	17	0	5-	R	MR	R
Mollybloom	98	47.5-	12	41	14-	1	20+	R	R	I
Mulligan	85-	47.8-	17	38	22	19+	19+	R	R	I
Location Avg.	96	48.8	13	38	21	03	15			
L.S.D. (0.05)	08	0.7			06	02	02			
C.V.										

⁽¹⁾ The number in brackets below column headings indicates the number of tests on which data are based. A (+) or (-) sign indicates performance significantly above or below the test average, respectively.

Table 2.3 Summary of performance of entries in the State Barley Test, 1990⁽¹⁾.

Variety	Yield (Bu/Ac) [6]	Bushel Weight (lbs.) [4]	Date Headed (Mar31+) [3]	Height (inches) [3]	Lodg. % [2]	Net Blotch (0-9) [1]	Leaf Rust % [1]	Seedling Reaction			
								Powdery Mildew	Leaf Rust	Scald	
Nomini Sussex	92.0+ 75.5	46.1 45.4-	18 16	40 38	27 30	1 3	6 8	MR R	MR I	MR R	
Boone Wysor Pennco	79.3 87.7+ 89.3+	45.7- 46.9 45.8-	25 21 22	39 41 41	26 45 31	1 3 3	6 6 3	S R R	R R MR	S R R	
Location Avg. L.S.D. (0.05) C.V.	79.6	46.8	20	38	26	2	5				

⁽¹⁾ The number in brackets below column headings indicates the number of tests on which data are based. A (+) or (-) sign indicates performance significantly above or below the test average, respectively.

Table 2.4 Summary of performance of entries in the State Barley Test, 1989⁽¹⁾

Variety	Bushel					Seedling Reaction				
	Yield (Bu/Ac) [5]	Weight (lbs.) [5]	Date Headed (Mar31+) [3]	Height (Inches) [3]	Lodg. (0-10) [5]	Spot Blotch (0-9) [2]	Net Blotch (0-9) 1987-88 [1]	Powdery Mildew	Leaf Rust	Scald
Nomini Sussex	75.9 72.7	43.5 43.3	22.4 22.9	39.5 39.6	5 5	3 3	5 6	MR R	R S	R R
Boone Wysor Pennco	63.5 66.0 76.0	44.3 44.4 43.6	25.9 25.3 26.2	41.0 39.1 39.8	8 5 5	2 2 4	2 3 6	MR R R	R R MR	I R R
Location Avg. L.S.D. (0.05) C.V.	71.9	43.9	25.4	39.6	5	5				

⁽¹⁾ The number in brackets below column headings indicates the number of tests on which data are based. A (+) or (-) sign indicates performance significantly above or below the test average, respectively.

Table 2.5 Summary of performance of entries in the State Barley Test, 1988⁽¹⁾.

Variety	Yield (Bu/Ac) [7]	Bushel Weight (lbs.) [7]	Date Headed (Mar31+) [5]	Height (inches) [6]	Lodg. % [7]	Winter Survival % [2]	Net Blotch (0-9) [1]	Powdery Mildew % [1]	Leaf Rust % [1]
Nomini	106.8	46.0	22-	41	17-	100	5	0	8
Sussex	91.2	44.6-	21-	39	30	77	6	0	15
Boone	90.5	47.2	28+	43+	75+	100	2	37	5
Wysor	98.4	46.9	25	40	30	100	3	0	0
Pennco	99.6	45.0-	26	39	32	100	6	0	0
Location Avg.	99.6	46.2	26	40	32	98			
L.S.D. (0.05)	10.5	1.0	2	1	11				
C.V.									

⁽¹⁾ The number in brackets below column headings indicates the number of tests on which data are based.
A (+) or (-) sign indicates performance significantly above or below the test average, respectively.

Table 2.6 Summary of performance of entries in the State Barley Test, 1987⁽¹⁾

Variety	Yield (Bu/Ac) [4]	Bushel Weight (lbs.) [4]	Date Headed (Mar31+) [3]	Height (Inches) [4]	Lodg. % [4]	Net Blotch (0-9) [1]	Powdery Mildew % [1]
Nomini	81.4	44.9	26	37	23	1.5	0
Sussex	78.1	43.9	23-	37	22	2.5	0
Boone	78.4	45.2	29	40+	62	1.0	38
Wysor	74.5	44.8	28	37	30	1.8	0
Pennco	81.9	43.1-	29	37	22	3.7	0
Location Avg.	78.9	44.4	27	38	33		
L.S.D. (0.05)	None	1.3	2	2	None		
C.V.							

⁽¹⁾ The number in brackets below column headings indicates the number of tests on which data are based.
A (+) or (-) sign indicates performance significantly above or below the test average, respectively.

Nomini* Barley*14E. Exhibit E. Basis of Applicant's Ownership**

The owner of *Nomini* barley is the Virginia Polytechnic Institute and State University of which the Virginia Agricultural Experiment Station is a part. Employees charged with developing this new cultivar as a condition of their employment understand that ownership rests with Virginia Polytechnic Institute and State University pursuant to university policy on intellectual property.